



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/691,667 | 10/24/2003 | Kouichi Takeuchi | 12014-0022 | 6353 |

22902 7590 06/20/2006

CLARK & BRODY
1090 VERMONT AVENUE, NW
SUITE 250
WASHINGTON, DC 20005

| |
|----------|
| EXAMINER |
|----------|

CARRILLO, BIBI SHARIDAN

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1746

DATE MAILED: 06/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,667

Applicant(s)

TAKEUCHI ET AL.

Examiner

Sharidan Carrillo

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5-7,15,17,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5-7, 15, 17, 21-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Drawings

1. Figures 1, 4-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Figs. 1, 4-5 of the instant invention are identical to Figs. 1, 3 and 4 of JP2000-297390. See MPEP § 608.02(g).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-3, 5-7, 15, 17, 21-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 5 are indefinite because it is unclear how the distribution ratio is calculated based on the pickling pattern and the traveling speed. Claim 6 is indefinite because "one or both of the scale thickness" lacks positive antecedent basis. Claim 6 is dependent on claim 5 which recites a predetermined scale thickness. Claim 5 does not recite more than one scale thickness, and therefore, the limitations of "both" of the scale thickness is considered indefinite because it suggests more than one scale thickness and claim 5 only recites a "predetermined scale thickness".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 5-7, 17, and 21-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Mabuchi et al. (6096137).

In reference to claim 1, Mabuchi et al. teach a method of controlling pickling by monitoring operating conditions such as thickness and width of the steel strip, line speed (Abstract) and calculating the concentration of acid supplied into the pickling tank based on the above parameters.

In reference to the distribution ratio, Mabuchi et al. teach calculating and controlling the concentration distribution of acid based on the operating conditions (col. 2, lines 39-65). In reference to claim 6, also refer to col. 3, lines 25-31. In reference to claim 5, refer to col. 7, lines 15-25 which teaches determining preset values for the concentration of the acid. In reference to claims 7 and 17 refer to Fig. 1. In reference to claims 21-22, refer to col. 1, lines 1-15.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

Art Unit: 1746

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mabuchi et al. (6096137) in view of Kawasaki et al. (4872245).

Mabuchi et al. teach the invention substantially as claimed with the exception of scale thickness based on the steel type. Page 6 of the instant specification teaches "steel type" based on the steel composition and coiling temperature.

Kawasaki et al. teach a method for continuous pickling of a hot-rolled steel strip (Abstract). In col. 7, lines 35-45, Kawasaki et al. teach that the type or grade and coiling temperature are initially set in the control computer. The properties of quantity of scale are determined based on the input in the control computer.

It would have been obvious and within the level of the skilled artisan to modify the method of Mabuchi et al. to include adjusting the scale thickness based on the

Art Unit: 1746

operating parameters, as taught by Kawasaki et al, for purposes of removing scaled from the surface of the hot-rolled steel.

Response to Arguments

10. Applicant argues that while Mabuchi may be changing the concentration of HCl or the amount of acid, this change is only reflected in the acid supplied to the last tank. Applicant additionally argues that there is no teaching of controlling the amount of acid to the last two tanks and how much acid should be distributed to each of the last two tanks. Applicant argues that Mabuchi only teaches controlling the acid in the last tank only and further takes the position that there is no motivation to control acid in two or more tanks using a distribution ratio and further argues that there is no mention of determining a distribution ratio in Mabuchi for controlling input of acid to at least the last two tanks. Applicant argues that Mabuchi fails to teach controlling the supply of acid solution to the at least first and second tanks.

Applicant's arguments are unpersuasive for the following reasons. In col. 2, lines 50-65, Mabuchi teaches monitoring a quantity of state wherein at least one of the quantities of state of operation includes the supply amount of the acid solution which is supplied to the pickling tank. The abstract specifically teaches that the quantity of state is represented by the concentration and amount of acid which is supplied to the pickling tank. The examiner argues that monitoring the supply of acid in the pickling tank is equivalent to "controlling the supply of acid" as recited in claims 1 and 5. Col. 3, lines 35-40 specifically teaches monitoring the concentration and amount of acid solution which is "supplied to each of a plurality of pickling tanks". In col. 23, lines 40-50,

Mabuchi teaches calculating material balances of acid at a plurality of positions "in the respective picking tanks". In col. 3, lines 9-50, Mabuchi teaches monitoring the supply of acid and further teaches calculating material balance of the acid at a plurality of positions based on the amount of acid flowing in and flowing out of the tank and the amount of acid consumed at respective optional positions in the pickling tank. This is also a controlling step. Basically, Mabuchi teaches controlling the supply of acid by monitoring the acid concentration at a plurality of locations and looking at the amount of acid flowing in, flowing out, and consumed. In col. 9, lines 12-15, Mabuchi teaches controlling the HCl acid supplied. Additionally, col. 15, lines 45-50 teaches controlling at least one of concentration of a supply acid which is supplied into the pickling tank. Further, it is notoriously well known in the art to control the amount of acid in each tank as evidenced by Patents 5,800,694, 3,433,670, and 6,396,280.

11. In reference to applicant's arguments that the prior art of Mabuchi fails to teach a distribution ratio, the examiner finds applicant's arguments unpersuasive for the following reasons.

In col. 9, lines 23-25, Mabuchi teaches that the pickling apparatus comprises a catenary type pickling tank which consists of several sectional tanks, each of which is provided with a hydrochloric acid solution. Figs. 7-8 show the concentration of HCL in each of the pickling tanks. Col. 11, lines 1-15 teaches that the concentration distribution of HCL is obtained by the algorithm. Col. 6, lines 5-15 teaches the variables such as traveling time, line speed which are used in the algorithm. Specifically, Mabuchi uses the algorithm to determine the amount of HCl in each tank. In col. 7, lines 30-35

teaches using the algorithm to determine "the concentration distribution of acid" in the pickling tank. Since the pickling tank consists of several sectional tanks, Mabuchi teaches determining the concentration distribution of acid in each of the tanks, as further evidenced by Fig. 8.

12. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

13. Applicant argues the showing of unexpected results on pages 19-21 of the instant specification. Applicant's arguments are not persuasive because they are not commensurate in scope with the claimed invention. The example on page 20-21 is directed to the use of feed forward and feedback control, which is not recited in the claims and the examiner is uncertain the meaning of the above terms. Since the specification is poorly written and unclear, as previously discussed in the interview of Mr. Brody on 4/5/2006, the example does not show a clear teaching of unexpected results. Additionally, unexpected results would not overcome a statutory bar rejection.

14. The rejection of the claims under 112, second paragraph, with respect to the distribution ratio and pickling pattern is maintained. Applicant argues that the claimed

Art Unit: 1746

invention should not be limited to how the distribution ratio is determined. Applicant's arguments are unpersuasive for the following reasons. The instant specification on page 12 teaches that when the pickling of a steel strip is carried out at the same speed, a series of pickling patterns are generated as illustrated in Fig. 3. The specification further states that when Pattern 3 is picked a set value of the distribution ratio is different from the distribution ratio with respect to Pattern 1. Page 15, lines 20-26 teaches that the distribution ratio for the pickling tanks is based on the value of weight loss "m", as illustrated in Fig. 4. However, it is unclear whether the patterns, as illustrated in Fig. 3, are used in Fig. 4 to determine the weight loss between each of the tanks. Since the determination of the distribution ratio is based on Fig. 4 and each pickling pattern has a different distribution ratio, what is the relationship or nexus between Figs. 3-4? The specification clearly states on page 15, lines 25-26 that the distribution ratio P can be found in the same manner using Fig. 3". The specification does not teach how to determine the distribution ratio using Fig. 3. Further, Fig. 3 does not measure any values of weight loss "m" which are used to determine the distribution ratio. The correlation between the distribution ratio, weight loss and pickling pattern must be established since the specification teaches a) determining the distribution ratio based on weight loss, and b) pickling patterns having different distribution ratios. However, it is unclear how a distribution ratio is determined based on the pickling patterns of Fig. 3 and the specification fails to establish a correlation between Figs. 3-4. As a result, the limitations of determining a distribution ratio based on a predetermined pickling pattern are rendered indefinite since the specification does not teach how to

determine the distribution ratio based on the pickling patterns as illustrated in Fig. 3 nor does the specification teach the correlation between the weight loss "m" and the pickling patterns of Fig. 3 or the correlation between Figs. 3-4.

15. Applicant argues that the distribution ratio is not indefinite because a table with three patterns and three traveling speeds would produce nine distribution ratios. Applicant cites an exemplary table with vertical and horizontal headers only. This is not persuasive since this "exemplary table" does not address the issue of how to determine the distribution ratio based on the pickling patterns of Fig. 3.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Art Unit: 1746

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharidan Carrillo whose telephone number is 571-272-1297. The examiner can normally be reached on Monday-Friday, 6:00a.m-2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sharidan Carrillo
Primary Examiner
Art Unit 1746

bsc



SHARIDAN CARRILLO
PRIMARY EXAMINER